

**Notice of Allowability**

Application No.

10/691,353

Examiner

Hsien-ming Lee

Applicant(s)

KRYLIOUK ET AL.

Art Unit

2823

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/19/05 & 8/9/05.
2. ☒ The allowed claim(s) is/are 12-19.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_

HSIEN-MING LEE  
PRIMARY EXAMINER

9/22/05

## DETAILED ACTION

### *Remarks*

1. The objection to specification has been withdrawn in response to applicants' amendment filed 7/19/2005.
2. The replaced drawings submitted on 7/19/2005 have been approved by the examiner.

### *Examiner's Amendment*

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Neil R. Jetter (Reg. No. 46,803) on Sep. 22, 2005.

4. The application has been amended as follows:

In claim 13, at line 3, replace "more than 600 ° C" with -- between 600 ° C and 850 ° C --.

### *Allowable Subject Matter*

5. Claims 12-19 are allowed.
6. The following is an examiner's statement of reasons for allowance:

The closest prior art of record, Cumo et al. to US 2002/0086534, teach a related method, as stated in the previous Office action. Cumo et al., however, neither teach nor suggest providing a *single crystal* silicon substrate; depositing a *single crystal* zinc oxide layer on the substrate.

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7. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-ming Lee whose telephone number is 571-272-1863. The examiner can normally be reached on Tuesday-Thursday (7:30 ~ 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 571-272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

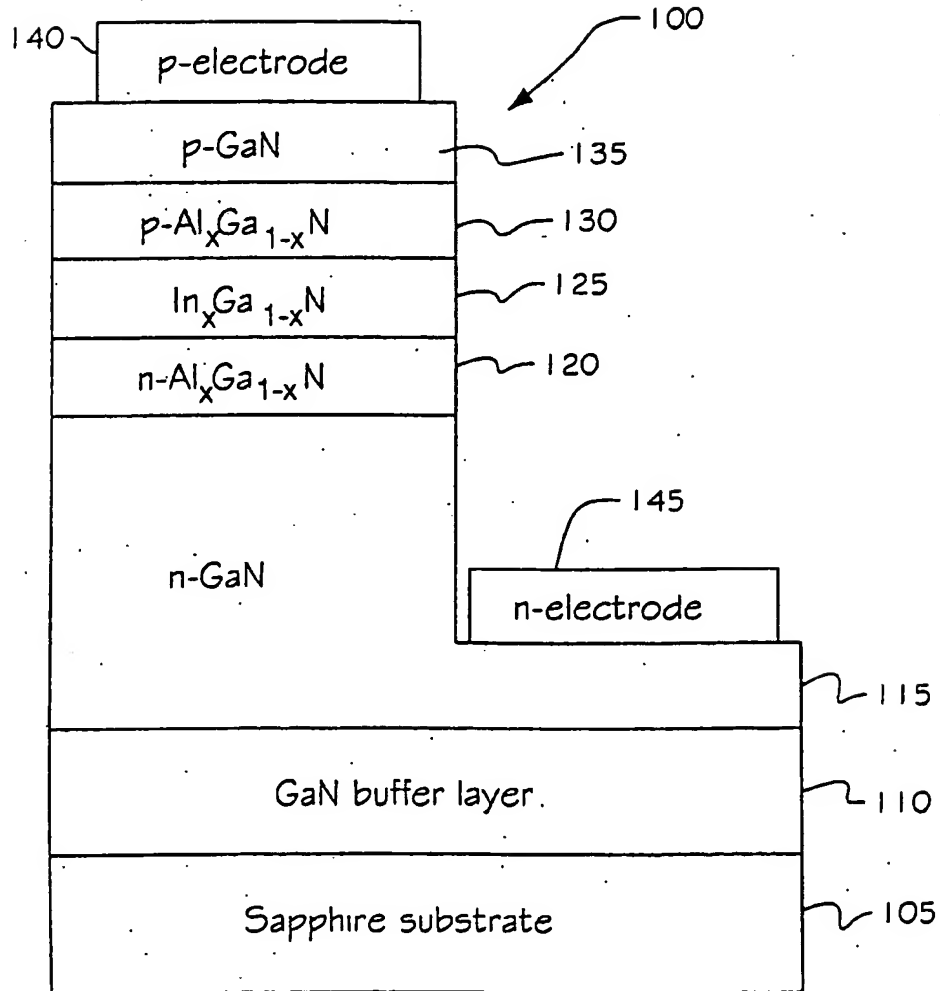
Sep. 22, 2005

Hsien-ming Lee  
Primary Examiner  
Art Unit 2823  
**HSIEN-MING LEE**  
**PRIMARY EXAMINER**

9/22/05



FIG. 1(a)



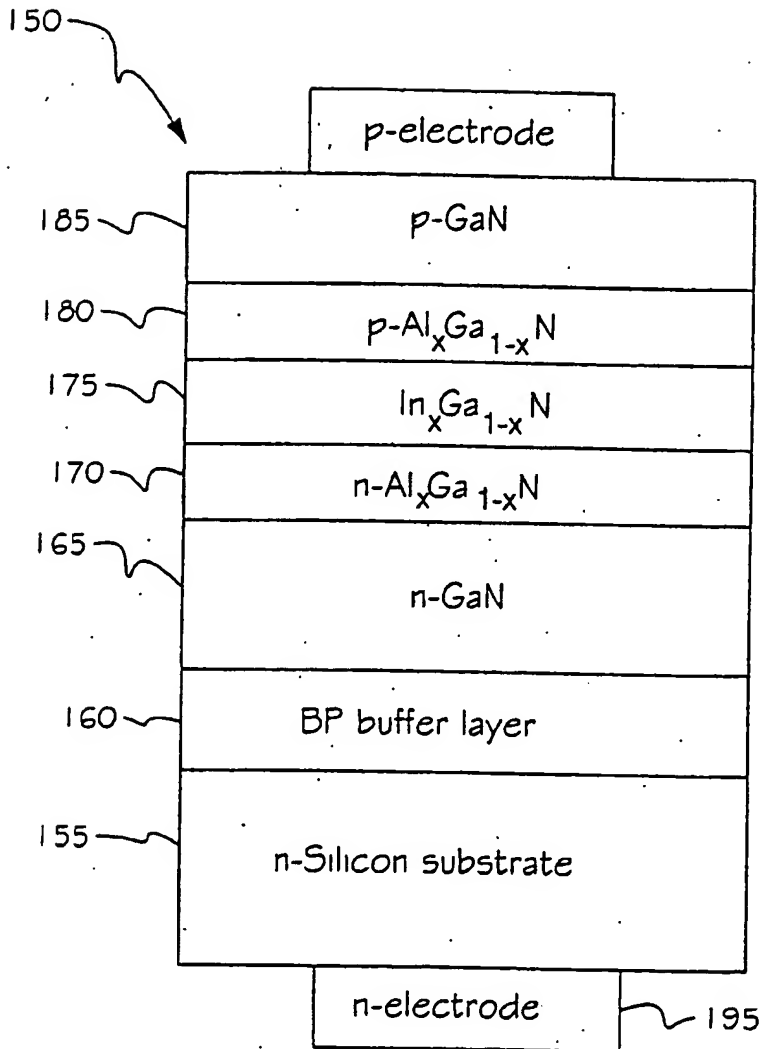
PRIOR ART

approved

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9/19/05

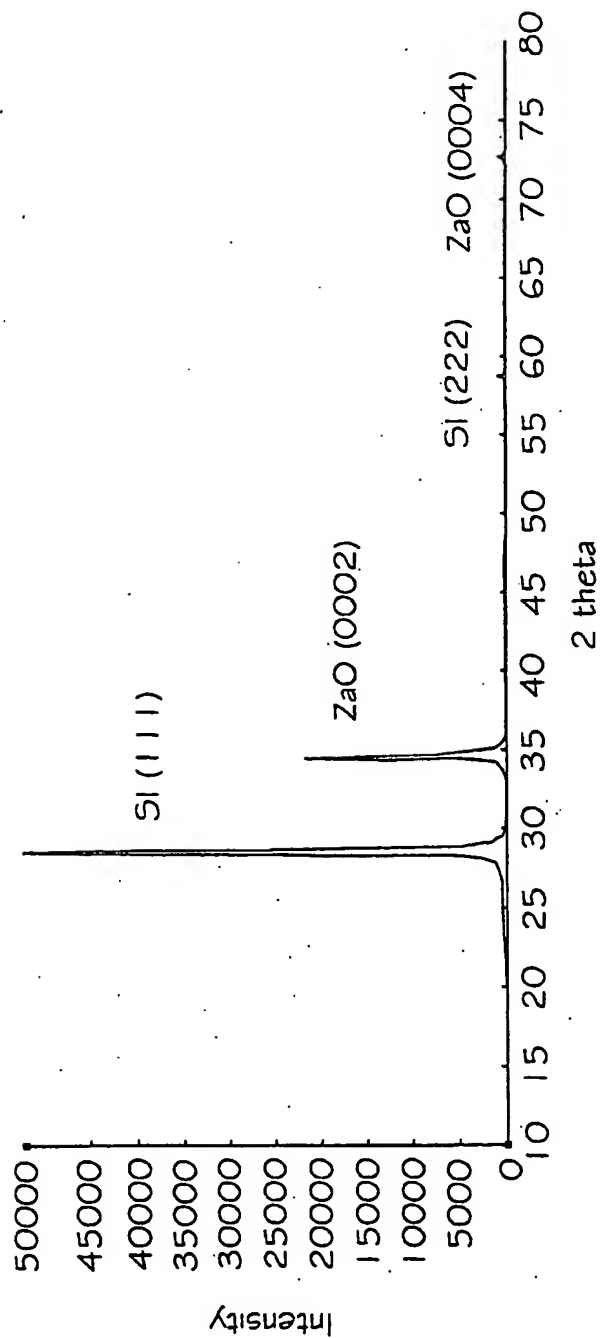
FIG. 1(b)



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for  
9/9/05

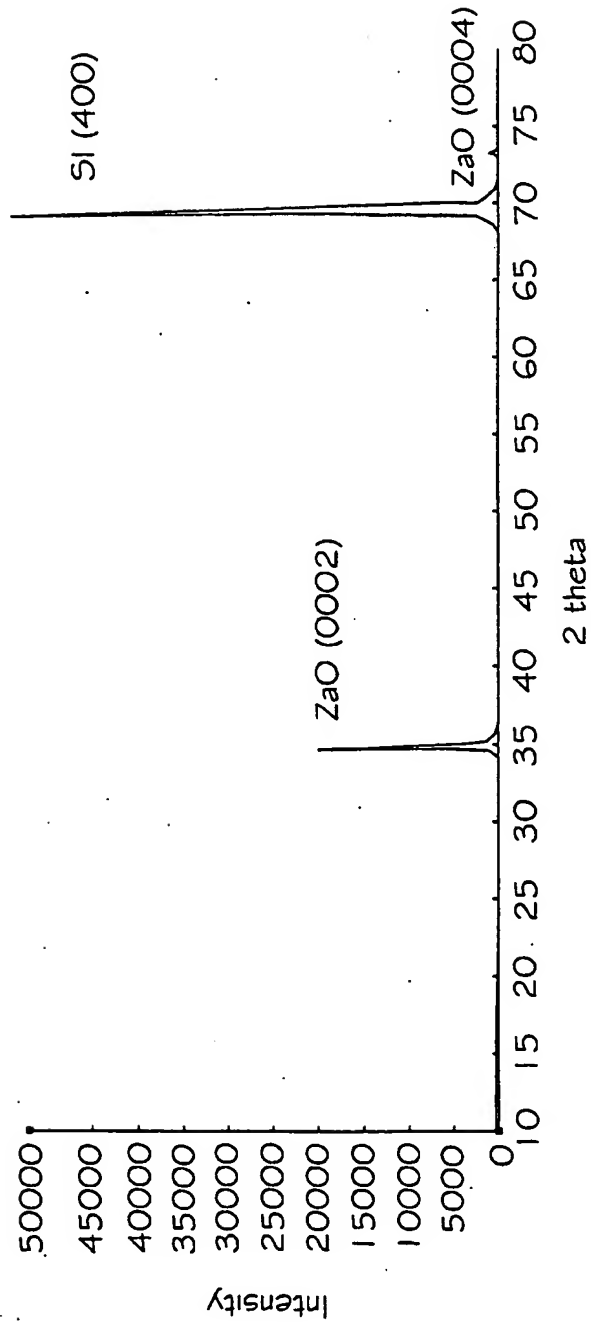
approved  
Lee  
9/9/05

FIG. 2(a)



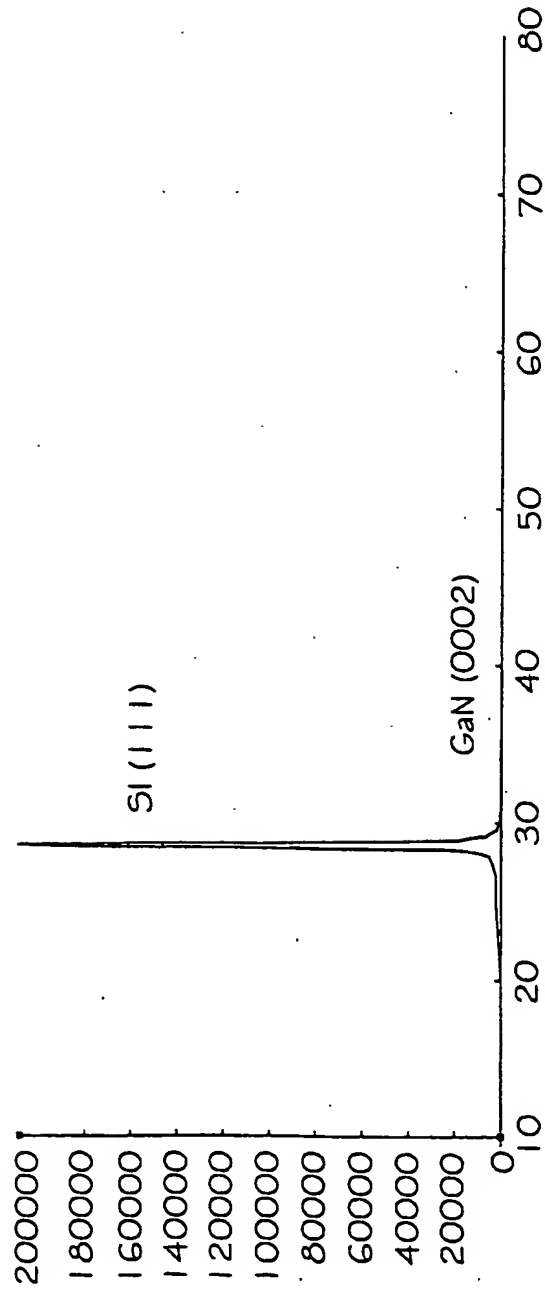
approved  
Lee  
9/19/05

FIG. 2 (b)



approved  
Lee  
9/9/05

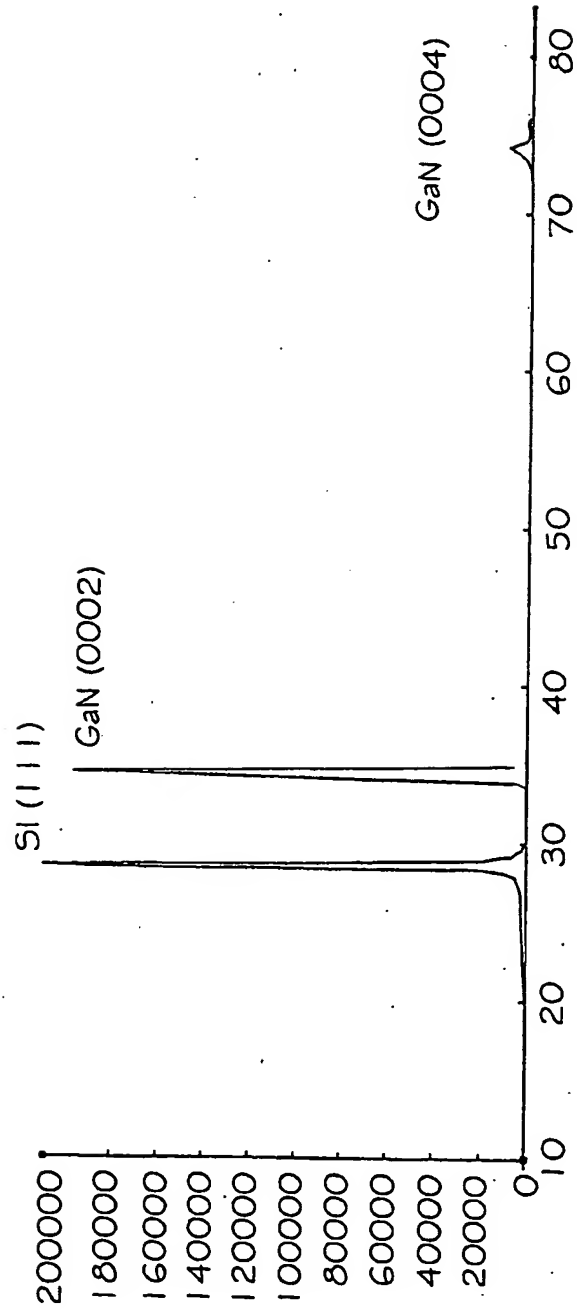
FIG. 4(a)





approved  
Lee  
9/14/05

FIG. 4(b)



*approved*  
*Lee*  
*9/9/05*

# Room Temperature PL of GaN/ZnO/Si

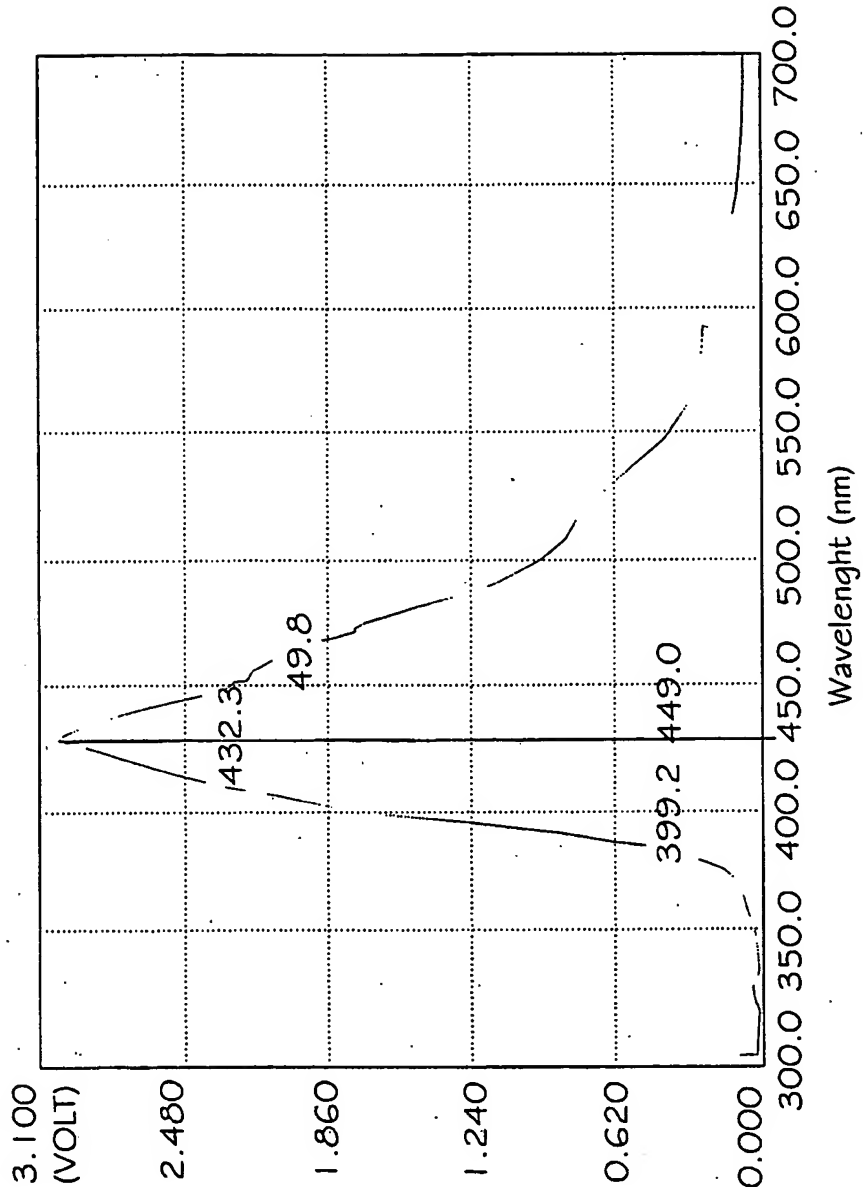


FIG. 8(a)

## PL spectrum of GaN/ZnO/Si

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9/9/05

# Room Temperature PL of GaN/ZnO/Si

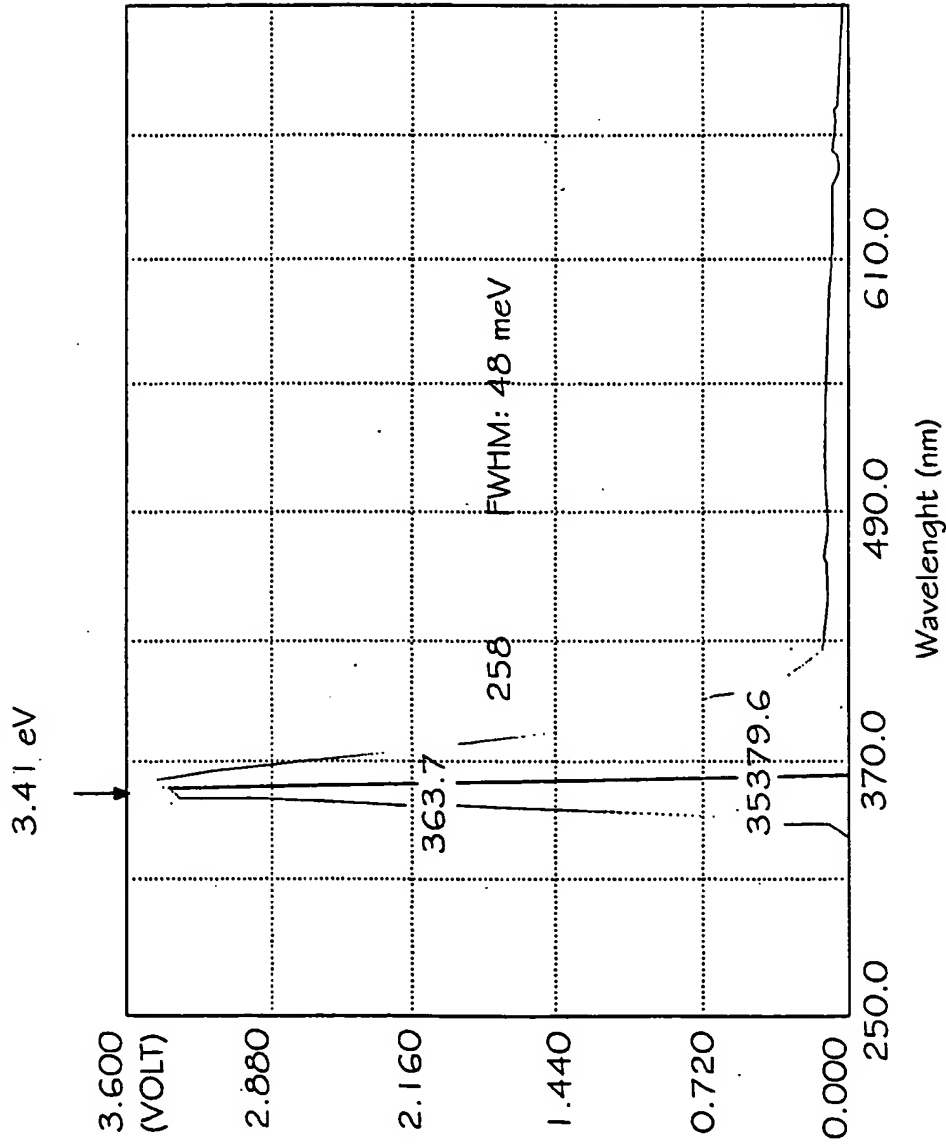


FIG. 8 (b)

## PL spectrum of GaN on bare Si